differential calculus to "Rates" (Chapter IV) and "Maxima and Minima" (Chapter V) are given right after "Differentiation of Algebraic Functions" (Chapter III). "Transcendental Functions" are not introduced until Chapter VI. (4) Maxima and Minima are treated without the use of second derivatives. (5) The number e is introduced in Chapter VI as the number satisfying the relation

$$\lim_{x=0} \frac{e^x - 1}{x} = 1.$$

and the approximate value of e is not computed until Chapter X on "Series and Approximations" is reached. (6) Chapter VII contains "Geometrical Applications" to both plane and solid geometry and they are so arranged that the latter may be omitted if it is desired. (7) There are numerous applications to the simpler problems of mechanics in the plane and in space.

The chapter headings not already mentioned are Chapter VIII, "Velocity and Acceleration in a Curved Path," Chapter IX, "Rolle's Theorem and Indeterminate Forms," and Chapter XI, "Partial Differentiation."

The supplementary exercises at the end of the book (pages 140–153) are to be used as "material for review and to provide problems for which answers are not given.

The book seems to be one which will teach the student not only the mechanical part of differential calculus but also the true value of the processes involved.

A. L. UNDERHILL.

UNIVERSITY OF MINNESOTA.

PROBLEMS FOR SOLUTION.

SEND ALL COMMUNICATIONS ABOUT PROBLEMS TO B. F. FINKEL, Springfield, Mo.

ALGEBRA.

475. Proposed by E. B. ESCOTT, Kansas City, Mo.

A man makes a contract to purchase a house, making a cash payment down and agreeing to make monthly payments of a dollars, interest being charged at six per cent., the balance of the monthly payments being credited on the principal. Find a formula for M_n, the balance due after n payments.

476. Proposed by W. HAROLD WILSON, University of Illinois.

Prove that, if $x_h \neq x_j$, $h, j = 1, 2, 3 \cdots n$, $h \neq j$, then

$$\sum_{i=1}^{n} \frac{{x_i}^{n-1}}{\prod_{h=1}^{n} (x_i - x_h)'} = 1,$$

where the prime indicates the omission of zero factors in the denominators.

GEOMETRY.

508. Proposed by J. E. ROWE, State College, Penn.

The trilinear coördinates of the vertices of the Brocard triangle are $(s_3^3, s_1s_2s_3, s_1^3)$, $(s_2^3, s_1^3, s_1s_2s_3)$, and $(s_1s_2s_3, s_3^3, s_2^3)$, where s_i $(i = 1, 2, 3)$ are the sines of the angles of the funda-